

Catholic Education Office **Sydney**
www.ceosyd.catholic.edu.au



Implementing an iPad strategy

Advice to schools

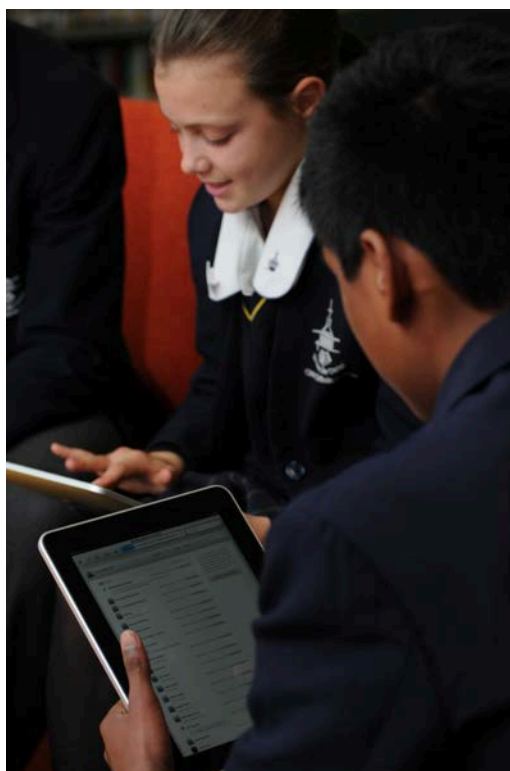


Table of Contents

ADVICE TO SCHOOLS	1
IPAD ELEARNING ADVICE TO SCHOOLS	3
<i>Introduction.....</i>	3
<i>Framing Teaching and Learning Questions.....</i>	3
<i>Professional Development.....</i>	4
<i>Management of iOS devices.....</i>	4
<i>About Apps.....</i>	5
<i>Creation/ownership.....</i>	5
<i>Copyright.....</i>	5
<i>Cost.....</i>	5
<i>Choosing the right Apps</i>	5
<i>Suggested Apps</i>	6
<i>Additional information and useful websites</i>	6
<i>iLE@RN with Mobile Devices Course Modules.....</i>	6
IPAD ICT ADVICE TO SCHOOLS	7
<i>Purpose.....</i>	7
<i>Summary</i>	7
<i>iPad.....</i>	8
<i>Models.....</i>	8
<i>Warranty.....</i>	8
<i>Technical Specifications.....</i>	9
<i>Accessories</i>	9
<i>Purchasing iPads</i>	10
<i>Managing iPads.....</i>	10
<i>Licensing Apps.....</i>	10
<i>Purchasing and Deploying Apps.....</i>	11
<i>Wireless Connectivity</i>	11
<i>Internet Connectivity.....</i>	12
<i>Technical Limitations.....</i>	12
<i>Support.....</i>	13
<i>iOS 5</i>	13
<i>iCloud.....</i>	13
<i>iTunes Store usage flow chartfor Sydney Catholic School purchases.....</i>	14

iPad eLearning Advice to Schools

Introduction

The technological age of the 21st century has been strongly shaped by rapid developments in digital technology innovations and application. These developments have radically changed the technology landscape for users allowing ubiquitous access to the Internet through a proliferation of smaller and smarter hand held multi-purpose devices such as phones and tablets. Apple's recent release of the iOS class device has further enhanced the features of mobile devices leading to a significant increase in worldwide adoption by school age students.

iOS Devices include Apple iPads, iPods and other Apple mobile devices. These devices are enormously popular with adults and children with significant numbers of Australian schools identifying the iPad as a valuable classroom resource. A school decision to purchase iOS devices requires careful thought and preparation to ensure the desired learning outcomes are achieved. Mobile devices deliver new and engaging ways to provide for the diverse needs of learners. In particular the provision of rich personalised assistive technology applications. While the iPad can provide a very responsive and intuitive learning experience for the user they are also quite different to other computer devices and there are particular technical and management issues that should consider prior to implementing a school-based iPad strategy. These issues are addressed in the ICT Advice section of this document.



Before addressing these practical issues the decision to investigate iOS devices for students must be first framed in terms of the learning outcomes which students are expected to achieve.

Framing Teaching and Learning Questions

- **Learning outcomes**
 - Can the iOS device facilitate the achievement of learning outcomes?
 - Can specific learning outcomes be identified?
- **Familiarisation**
 - Is resource allocation sufficient to allow time for teachers to explore the iOS features and application of the device?
- **Pedagogy**
 - Will the device support contemporary pedagogies?
 - Personalised learning.
 - Inquiry Based learning.
 - 21st Century skills such as multimodal literacy, collaboration, communication and higher order thinking.

- **Software**

Has research been undertaken to explore the Apps that will be needed to support the identified learning outcomes?

There are recommended App sites listed in the Apps section of this paper.

- **Assessment**

How will the effect and impact on student learning outcomes of the iPad strategy be measured?

Professional Development

The interface on the iOS devices is easy to use; however there are concepts such as cloud storage, syncing and file management techniques that may be new to many teachers and students. The need for a professional learning program that support teachers in learning about these concepts should be part of the planning for the introduction of iOS resources such as iPads.

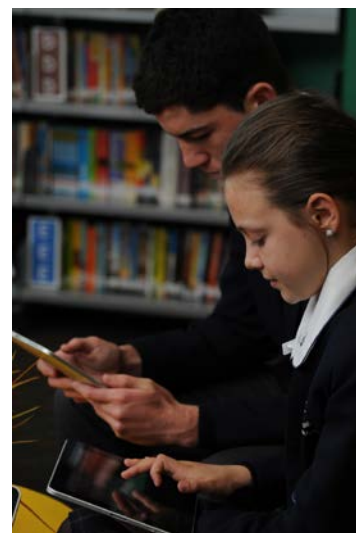
To assist teachers in the effective use of iPads a professional development course has been developed by the eLearning Team. The course “ **iLe@rn with Mobile Devices – iPad 2**” (Course Code KMICTJL04) is available for enrollment through the CEO Inservice Guide.

There are also a number of tutorials on the use of iPads available in Atomic Learning.

Management of iOS devices.

These devices are designed for a single user who has an iTunes account. In many schools, students with special needs have an iPad as their personal device. This 1:1 relationship requires an iTunes account for the user who then manages their device.

Increasing numbers of schools are interested in the device as a shared resource for classroom or library learning spaces. The shared device model requires more management by staff of the devices and the Apps that are installed. In the case where a school chooses to use the iPad as a shared resource it is recommended that a small number of iPads “belong” to a class or stage for management by their teacher. The school ICT Support Officer can support the teacher if problems are encountered in connecting the iPad to the internet.



When purchasing sets of mobile devices schools need to consider:

- Responsibility for managing the devices including downloading of Apps, battery charging, updates etc.
- Procedures for distributing and collecting the iPads including labeling the devices for account management.
- Storage and power charging facilities.

- Procedures for periodic deletion of iPad content.
- Budget, procedures and accounting for the cost of Apps.

Points of difference between iPads and laptop/Desktop Computers include the software available.

iOS devices run custom built Apps; they do not use the same software as PCs and cannot run programs such as Geogebra and Adobe Photoshop. At the time of this publication Smart notebook software cannot be loaded onto iOS devices. Flash content does not run on Apple iOS devices. Some examples of Flash include video clips and popular websites such as Glogster. Other Flash based programs such as Voicethread now have an iOS App available. There is however future planning underway by a number of software companies including Adobe to develop in HTML 5 allowing active content to be accessible on the iPad.

About Apps

Apps are the software applications written for iOS devices.

Creation/ownership

Some Apps are developed and owned by Apple, including the standard Apple software such as Pages, Keynote, iMovie and Garageband. Many others are written by 3rd party developers. These may not meet the same specifications or be maintained as often as Apple Apps. Information on the creator, the App and ratings and comments by users are available in the iTunes store.

Copyright

Apps are covered by copyright law and once purchased can be synched to all devices owned by one person. In schools, each device needs its own account and a purchased copy of the App. Please see Appendix 1 - copyright decision making flowchart when considering copyright issues.

Cost

A significant number of high quality Apps are free; some provide a free or 'lite' version with fewer features. These 'lite' Apps can be tried before purchasing the full version of the App.

Choosing the right Apps

When deciding on Apps it is recommended that schools:

- Firstly and most importantly, think about the activities/actions that are already part of teaching and learning practice, such as mental starters, mapping, stop watch, camera, videoing, mind mapping, note taking, book reading and document distribution.
- Try the lite version of the APP if available to assess the effectiveness and appropriateness to contribute to identified learning outcomes
- Initially purchase a small core of Apps for each KLA or curriculum goal, and then add more to match learning outcomes.



- Visit web sites and online networks for teachers to connect, collaborate, share and learn from other teachers and schools.

Suggested Apps

There are many sites that provide lists of recommended Apps. These sites provide information about educational Apps for Australian students.

- Apps in Education. This blog by Greg Swanson reviews education Apps in KLA categories. <http://appsineducation.blogspot.com>
- Apple Education curated app collection: www.apple.com/au/education/apps/
- Victorian Government iPad site <http://www.ipadsforeducation.vic.edu.au/>

Additional information and useful websites

- Information and links can be found on the iPads and Learning page of MyClasses <http://centralmyinternet.catholic.edu.au/myclasses/Class,102613123475731>
- iPads in Education (<http://ipadeducators.ning.com/>) a blog with all things iPad, dedicated to exploring the use of iPads and eBooks in education.
- iPad in Education (<http://www.larkin.net.au/blog/2011/01/30/ipad-in-education/>) John Larkin, a Victorian teacher, maintains an extensive blog. This page supports a PD course he offers. Scroll down the page to find Resources and Links.

iLE@RN with Mobile Devices Course Modules

- Module 1 - Exploring the iPad
- Module 2 - Making Connections
- Module 3 - Learning with Apps
- Module 4 - Working with Files
- Module 5 - Multimodal Literacies
- Module 6 - Transforming Learning



iPad ICT Advice to Schools

Purpose

The purpose of the ICT advice section of this document is to provide technical information related to Apple iOS devices specifically the iPad. This information is provided to assist schools to understand how the device operates as well as the technical limitations of the device in a CEO Sydney school environment.

Summary

Key point summary for those schools wishing to purchase iPads for use in CEO Sydney schools:

- It is recommended that schools should purchase the 16 GB Wi-Fi only model
- It is recommended that schools should purchase the AppleCare Protection Plan to extend the warranty on the iPad to 2 years and apply for the iOS Direct Service Program.
- In a one-to-one environment students should manage their own iPads including purchasing and deploying Apps.
- In a one-to-many environment teachers should manage the iPads including purchasing and deploying Apps.
- It is recommended that in both one-to-one and one-to-many environments the ICT Support Officers should only support connecting the devices to the wireless network and Internet.
- Schools shall be correctly licensed for all Apps by purchasing separate licenses for each App on each iPad and other iOS devices that they own.
- It is recommended that the purchasing and deploying of Apps should be administered using a “master” iTunes account so that there is visibility over which Apps have been purchased by the school.
- It is recommended that primary schools should connect to the wireless network using the WPA-PSK method.
- It is recommended that secondary schools connect to the wireless network using the web-authorisation method.
- It is recommended that both primary and secondary schools connect to the Internet via Zscaler by using the PAC file hosted by CEO.
- It is recommended that schools test the connectivity of all Apps at their school prior to purchase for multiple iPads and other iOS devices. If an App does not connect to the Internet because it is not designed to use the iPads iOS proxy settings or because

it uses a non-standard web port then ICT will not be able to assist.

- It is recommended that schools should not purchase iPads for use with Flash including learning objects and Scootle.
- Schools understand the boundaries of what is in-scope and what is out-of-scope of support for iPads before purchasing and prior to logging support requests to their ICT Support Officer.

iPad

The Apple iPad is a tablet computer. The user interface and operating system called iOS is the same as Apple's iPhone and iPod Touch. It is controlled by a multi-touch display operated by finger touches and gestures.

<http://www.apple.com/au/ipad>

Models

Currently there are six models of iPad. Three models have Wi-Fi connectivity with a choice of three different storage capacities including 16 GB, 32 GB and 64 GB. Three other models have Wi-Fi and 3G connectivity with a choice of three different storage capacities including 16 GB, 32 GB and 64 GB.

Recommendation: Schools should purchase the 16 GB Wi-Fi only model and the AppleCare Protection Plan to extend the warranty on the iPad to 2 years.

Warranty

The iPad comes with a one year limited hardware warranty that includes the iPad, rechargeable battery and all included accessories. Additionally the iPad comes with a complementary ninety days telephone technical support.

http://images.apple.com/legal/warranty/docs/ipad_warranty.pdf

The limited hardware warranty and telephone technical support can be extended to two years by purchasing an AppleCare Protection Plan (APP).

http://images.apple.com/legal/applecare/docs/APAC_APP_iPad_English_ZAv1.3.1.pdf

To make a warranty claim schools are required to contact Apple warranty support on 1300 301 596. Once Apple warranty support have been called, the iPad warranty requires the iPad to be returned to Apple for repair and collected when the repair is complete.

Apple have also introduced the iOS Direct Service Program. This program provides a greater level of convenience for the owner of the iPad and reduces cost to the organization. The iOS Direct Service Program supports education users by screening the iOS device identifying hardware faults, and if necessary directly ordering a replacement device or in-box accessory and exchanging it for the failed item at their service location.

<http://www.apple.com/au/support/programs/ids/>

Recommendation: Schools should purchase the AppleCare Protection Plan to extend the warranty on the iPad to 2 years and apply for the iOS Direct Service Program.

Technical Specifications

The table below lists a comparison of the technical specifications of the Wi-Fi only models of the iPad 2 and the New iPad.

Specification	iPad 2 - Wi-Fi Only Model	New iPad - Wi-Fi Only Model
Height x Width x Depth (cm)	24.12 x 18.57 x 0.88	24.12 x 18.57 x 0.94
Weight	601g	652g
Display	9.7-inch (diagonal) LED	9.7-inch (diagonal) LED
Resolution	1024 x 768	2048 x 1536
Processor	1GHz dual-core Apple A5	Dual-core Apple A5X
Storage	16 GB, 32 GB or 64 GB flash drive	16 GB, 32 GB or 64 GB flash drive
Wireless	Wi-Fi (802.11a/b/g/n)	Wi-Fi (802.11a/b/g/n)
Bluetooth	Bluetooth 2.1 + EDR	Bluetooth 4.0
Battery	Up to 10 hours	Up to 10 hours
Audio	Speakers, headphone and Mic	Speakers, headphone and Mic
Camera	HD 720p (back). VGA (front)	HD 1080p (back). VGA (front)
Operating System	5.1.1	5.1.1

<http://www.apple.com/au/ipad/specs>

Accessories

There are numerous accessories for the iPad available from Apple and other vendors. Some Apple accessories of note that can be of value in classrooms include:

- iPad Camera Connection Kit – This comes with a USB connection and a SD card connection for the iPad and allows digital cameras to be connected to the iPad photos and videos to be imported to be iPad.
- Apple Digital AV Adapter – This allows the iPad to be connected to HDMI-compatible displays and digital audio such as TVs.
- Apple VGA Adapter – This allows the iPad to be connected to VGA displays such as monitors and projectors.

- Apple Composite AV Cable – This allows the iPad to be connected to composite video and stereo audio such as LCD TVs.
- Apple Component AV Cable – This allows the iPad to be connected to component video and stereo audio such as LCD TVs.

<http://www.apple.com/au/ipad/accessories>

Purchasing iPads

The iPad is classed as a consumer device; as such educational pricing discounts are not readily available. Retailers are able to offer significantly discounted pricing sometimes at or below cost. To enable schools to gain the greatest benefit from the retailer discounted pricing schools are able to purchase directly from retailers. Schools wishing to purchase in units of ten can utilise the standard CEO ICT purchasing process by placing orders to ict.purchasing@ceosyd.catholic.edu.au

Managing iPads

iPads should be considered “personal” devices and are ideally managed by the owner/user. The licensing of Apps, purchasing and deploying of Apps, and content synchronization are all designed for individual use. In a one-to-one environment this can be easily achieved. In a one-to-many environment this is more complicated and requires careful school-based management. Please read the licensing, purchasing and deploying Apps sections below for further information on these activities.

Recommendation: In a one-to-one environment students should manage their own devices including purchasing and deploying Apps.

Recommendation: In a one-to-many environment the teachers should manage the devices including purchasing and deploying Apps.

Recommendation: In both one-to-one and one-to-many environments the ICT Support Officers should only support connecting the devices to the wireless network and Internet.

Licensing Apps

In a school environment each App is required to be purchased separately on each iOS device including iPads, iPhones and iPod Touches.

Please see the current Australian iTunes store, Mac App store, App store, and iBookstore terms and conditions below. Specifically the App store product usage rules.

<http://www.apple.com/legal/itunes/au/terms.html#APPS>

“If you are a commercial enterprise or educational institution, you may download and sync an App Store Product for use by either (a) a single individual on one or more iOS Devices used by that individual that you own or control or (b) multiple individuals, on a single shared iOS Device you own or control. For example, a single employee may use an App Store Product on both the employee's iPhone and iPad, or multiple students may serially use an App Store Product on a single iPad located at a resource center or library. For the sake of clarity, each iOS Device used serially by multiple users requires a separate license”.

Recommendation: Schools shall be correctly licensed for all Apps by purchasing separate licenses for each App on each device they own.

Purchasing and Deploying Apps

To be correctly licensed in a school environment each App must be purchased separately on each iOS device including iPads, iPhones and iPod Touches. The key to this is to manage each device with a unique iTunes account. Once each device is managed with a unique iTunes account there are two main ways for schools to purchase and deploy Apps to all iOS devices.

The first way is through an iTunes gift card for each iOS device. This enables the teacher responsible for managing the iOS device to redeem the gift card and download and install any required Apps for the individual iOS device that they manage. The advantage of this method is that it is very simple to administer. The disadvantage is that there is no visibility for the school as to which Apps have been purchased with the gift card.

The second way is through a “master” iTunes account where all iTunes store credit is deposited and then each required App is gifted to the required teacher via their iTunes store account. The advantage of this method is that the Master iTunes account has visibility over the Apps purchased. The disadvantage is the administrative overhead required to maintain the “master” iTunes account.

http://support.apple.com/kb/HT2736?viewlocale=en_US

Recommendation: Teachers shall be responsible for purchasing and deploying Apps onto iOS devices.

Recommendation: Purchasing and deploying of Apps should be administered using a “master” iTunes account so that there is visibility over which Apps have been purchased by the school.

Wireless Connectivity

The iPad is compatible with the wireless networks in Archdiocesan schools. It supports 802.11n the latest wireless standard. The iPad supports Cisco’s web-authorisation authentication method and the Wi-Fi Protected Access Pre-Shared Key (WPA-PSK) authentication method used in schools in the Archdiocese of Sydney.

The web-authorisation method of authentication requires a redirect to an IP address to work successfully. Access to IP addresses is blocked by Zscaler. To overcome this a proxy exception is required. The iPad operating system iOS 5.1.1 supports the use of a proxy however it does not support proxy exceptions. This means that schools that authenticate to the wireless network via the web-authentication method must disable the proxy before authenticating to the wireless network and then enable the proxy after successful authentication but before browsing the Internet. The solution to this is to use a Proxy Auto-Configuration (PAC) file, which is supported in iOS 5.1.1. The use of a PAC file allows for the proxy to remain enabled and wireless authentication to be seamless. The CEO hosts a PAC file for all schools to use. It is hosted at <http://proxy-pac.ceosyd.catholic.edu.au/wpad.dat>

Recommendation: Primary schools should connect to the wireless network using the WPA-PSK method. Secondary schools should connect to the wireless network using the web-authorisation method. Both primary and secondary schools should connect to the Internet via Zscaler by using the PAC file hosted by CEO.

Internet Connectivity

The iPad is designed for 'Cloud Computing'. Cloud computing is Internet-based computing where resources such as software and/or data may reside and are shared on the Internet. Examples of cloud computing are Apple's iCloud and Google Apps.

Connect to the Internet from Archdiocesan schools requires all devices to connect via the web-content filtering solution (proxy) called Zscaler. The iPad's operating system iOS 5.1.1 supports the use of a proxy. This means that general web browsing on the iPad works in the same way that it does on other school computers. It also means that web Apps including Google Apps work as well. Many other Apps designed for the iPad have been tested and confirmed to be working with Zscaler however it is possible that some Apps may not work.

One reason that some Apps do not work is because they don't use the standard web ports of 80 (HTTP) and 443 (HTTPS). In this case the Apps do not work because they are blocked by the CEnet firewall. To enable these Apps to work ICT are required to officially request CEnet to unblock their firewall. To make this request ICT are required to know the source IP address of the device(s); the destination IP address of the service the App uses; the port the App uses to connect to the service; and the protocol the App uses to connect to the service. This information is not always easily identifiable due to the large and ever growing number of Apps that may use non-standard web ports. ICT will not be able to provision access in the case that the source IP and destination IP addresses are not available.

Recommendation: Schools should test the connectivity of all Apps at their school before purchasing them for multiple devices.

Technical Limitations

As already discussed, iOS version 5.1.1 does not allow for a proxy exception to be configured. Another well-known technical limitation is that the iPad's native web browser Safari does not and will not support Adobe Flash. Apple has decided to adopt the HTML5 specification that is based on open standards. As Flash is a proprietary product of Adobe it is not an open standard. This means that iPads will not play any Flash content including learning objects.

<http://www.apple.com/hotnews/thoughts-on-flash>

Adobe has released a preview of a new product Adobe Edge that uses web standards including HTML5. In the future, this may lead to more rich motion design content including animation being viewable on iPads.

Recommendation: Schools should not purchase iPads for use with Flash including learning objects and Scootle.

Support

The ICT team including the Service Desk and the school ICT Support Officers will support iPads under the following scope:

- Connectivity to the wireless network and the Internet
- The process of purchasing and deploying Apps.

ICT will not support connectivity of Apps to the Internet or other cloud services or the responsibility of purchasing and deploying Apps.

Implementing an iPad strategy within a school requires an understanding of the boundaries of what is in-scope and what is out-of-scope for ICT support. Schools need to be aware of this in-scope and out-of-scope ICT support prior to purchase and before logging support requests to their ICT Support Officer.

iOS 5

iOS 5 is a mobile operating system developed and distributed by Apple Inc. iOS 5 introduced more than 200 new features for the iPod Touch, iPhone and iPad. iOS 5 also introduced the iCloud service and the Notification Center, as well as improvements to native apps such as camera.

<http://www.apple.com/ios/ios5>

iCloud

iCloud stores music, photos, apps, calendars, documents, and more online in the “cloud” and wirelessly pushes them to user devices automatically.

One of the great benefits of iCloud is the ability to replace or reset an iPad. By logging into the device with iCloud credentials the users settings including music, photos, apps, calendars and documents stored on iCloud automatically synchronise back to the device wirelessly.

<http://www.apple.com/icloud>



iTunes Store usage flow chartfor Sydney Catholic School purchases

This applies to purchases for IOS devices (iPods, iPads and iPhones)

